The Planters' Chronicle.

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THE U. P. A. S. I.

(INCORPORATED.)

Contents.

For those who are occupied in growing the various rubbers, an interesting article is published about the different rubbers in Brazil, by which, the rubbers of the two countries can be compared.

Mr. Danvers writes us two letters, one of which, that on Treating Stumps with Chemicals, is answered by the Planting Expert.

Those letters and articles of Mr. Brown, promised last week, on Green Bug and its treatment, are published, and should be carefully read by all coffee planters, as they throw sound light on the treatment of this pest. We are much indebted to Mr. Brown for his permission to publish these letters in a concrete form. They are very applicable at this juncture, when all coffee planters' thoughts are turned to this subject, To our mind the most valuable lesson to be learnt from these letters is, that of hope, and that taken at the proper time, there need be no fear of great damage being done.

As the Annual Meeting is coming on so soon, it has been thought advisable to print some letters from Mr. Manders and from Mr. Kendall, dealing with Rubber matters, which should interest the Rubber Planters of Southern India. We have some hope, that the Rubber Planters of Southern India will be represented at the Exhibition to be held in London in 1914. It is an opportunity that should not be allowed to slip by—and we trust, that at this Annual Meeting, it will be decided, that all Southern Indian products shall be exhibited.

From the Annual Diplomatic and Consular Reports, a Report on Tea and Coffee is published, giving figures which should be read with interest.

An article on Hevea Rubber Seed Oil as a poonac is published, showing what a valuable bye-product every rubber planter has at hand. Up-to-date machinery will doubtless add to its value.

THE SCIENTIFIC DEPARTMENT, U.P.A.S.I.

Manihot Rubber in Brazil.—The prospects of Ceará rubber in Southern India are bright, but many enquiries reach us as to the yield which is obtained on estates in Coorg and elsewhere and details of tapping &c. I hope that some authoritative figures will be given to the Annual Meeting of the U. P. A. S. I. this year. In the mean time the following interesting information is quoted from a letter in *The India Rubber World*, written by the Editor, who is making a tour of South Brazil. Ceará planters here will read this extract with interest, and can compare the Brazilian conditions with those on their estates.

"*The Manihots* cover an immense area of the healthy uplands of Southern Brazil, a territory running 1,000 miles north and south and as much east and west. There are sections where it does not appear at all and others where it is inaccessible. In eleven of the great Brazilian states, it is found wild, but its gathering is chiefly in the states of Bahia, Ceará, Piaugby, and Maranhao. So far, the planting of Manihots in Brazil, has been in the states of Bahia, Minces, and Piauhy. It is estimated that there are at least three million trees in the Brazilian plantations at the present time.

"Only a short time ago, only one *Manihot* was known, the *Glaziovii*. To-day four distinct types are recognised. The *Manihot* was formerly called the *Jatropha elastica*, and it is a blood cousin of the *Manihot utilissima*, which produces sweet cassava, and the *Manihot palmata*, or bitter cassava. The product of the various *Manihots* is called Ceará, Manicoba, Jequie or Manihot rubber.

"In tapping the *Glaziovii* and *dichotoma*, the outer bark is first removed, and the tree trunks tapped in zig-zags. The roots are pared half herringbone fashion, but roughly. On the tree trunk, the latex is caught in cups, but the general procedure is, to tap the trunk low down between the roots and dig a shallow hole at the base of the tree. Into this the rubber milk trickles, its watery content being absorbed by the soil. The sand, with which the hole is dusted, sticks to the rubber and makes it easier to handle, and also decreases its value very considerably. In the past, the Ceará milk was allowed to coagulate on the tree, and the result was a good dry rubber containing some bark. Some of the planters are now preparing *Manihot* rubber in sheets that are clean, dry, and in every way excellent. Most of the rubber at present comes from trees scattered over a vast wild area, impenetrable, except by native tappers, who are paid by weight. The result is, as a rule, very dirty, wet rubber, badly coagulated and containing stones, bark and dirt. Wherever it is possible to gather the latex in receptacles, clean rubber of fine quality is the result.

"The *Manihot Glaziovii*, or Ceará rubber tree, grows to a height of forty feet with a diameter of twelve inches. It has many branches, the lowest of which is about six feet from the ground. The bark is dark purple with transparent film-like epidermis which curls off as the bark is removed. This exfoliation is usually removed before tapping. The leaves are large and are divided in five, sometimes there are seven parts. The leaf stalk and veins are whitish. The planters were deceived at first by the favourable appearance of this tree, and planted it extensively, but it did not produce well. It is found wild in Ceará, Parahiba and Rio Grande do Norte, and is deciduous and thrives in dry lands and mountain regions, in fact will grow anywhere.

"The *Manihot dichotoma*, or Manicoba of Jequie, derived its last name from a town in the State of Bahia, which is the centre of commercial

trade in this rubber. It is a small tree with a trunk scarcely exceeding ten inches in diameter. The bark is smooth and purplish in colour, with parchment-like epidermis similar to the *Glaziovii*. The leaves when new, are of peculiar shield-like shape, and later become digitate. It is found in the south eastern districts of the State of Bahia and along the Paraguasu and Contas rivers. It thrives best in red clay soil, and is rarely found in sandy soil, or if so, gives much less rubber.

"The *Manihot heptaphylla* is a small tree growing to the height of seven to sixteen feet, with a diameter of four to six inches. The trunk is comparatively short and stocky, dividing into two or three branches which form a full leaved top of a lively green colour. The bark is dark grey in colour and the leaves are usually divided in seven lobes. The seeds are light coloured, without the sharp edges, thereby differing from the Ceara, and are larger. The tree is found exclusively on the right margin of the San Fransisco river growing in the mountains and rocky places.

"The *Manihot Pianhyensis* originated in the state of Piauhy, and although small in size, is most important as a producer of rubber. It resembles the heptaphylla, with a height of seven to sixteen feet and a diameter of four to six inches. The trunk, smooth and light grey in colour, divides into two or three branches forming a full spreading top. The leaves are usually divided in five and sometimes seven parts. They are digitate in form with the points rounded, a peculiarity of the *Pianhyensis*. This tree found in the state of Piauhy along the dividing line of the State of Bahia, grows principally on the small mountain slopes and ridges."

With regard to yield, the author says, so many different figures were given, that it was difficult to reconcile them. Dr. S. C. Quinn, however, states that, "the tapper works approximately six months in the year covering January to June. He takes one set of 650 trees on the average, tapping on Mondays and Tuesdays 250 trees per day, and on Wednesdays 150. On Thursdays and Fridays he re-tapps Monday's and Tuesday's lots, and on Saturdays, those he tapped the previous Wednesday. The same trees are tapped twice a week. With *Manihot* as with *Hevea* the so-called wound response is very marked.

"In the season, his out-put may be taken on the average at 360 kilos of damp rubber, equivalent to about 475 lbs. market rubber, or say, equivalent to about 285 lbs. actual dry rubber."

Dr. L. Zehntnet gives the following figures for the yield obtained from Manicobas of Bahia; the figures are pounds of dry rubber from 700 trees in 60 days:—

2 year old trees, 185 lbs.; 3 year old, 277 lbs.; 4 year old, 370 lbs.; 5 year old, 463 lbs.

Departmental.—The Planting Expert will probably remain at headquarters for the next two months, occupied with laboratory work, and matters connected with the forthcoming Annual Meeting.

The Scientific Assistant for Mysore has just completed a tour of inspection of the Kalisyndicate Experiment Plots, and the Green Bug infested area. He reports favourably upon the latter.

The Scientific Assistance for Coorg is engaged upon Kalisyndicate Experiment Plot work in present.

R. D. A.

CORRESPONDENCE.

Glendale Cottage,
24th June, 1913.

THE MANAGING EDITOR,
Planters' Chronicle,

Green Bug.

Dear Sir,—My article on "Green Bug" please insert following correction:—

For "Take one pound of Rosin and one pound of soda,"
Read "Take two do do do do."

We found from experience that the larger quantity of Rosin is best, as there is less scalding of tender leaves and better sealing up of bug.

The word printed *resin* should be *Rosin* as the other orthography is apt to give a wrong impression and any other resin may be tried with negative results!!!

Yours faithfully,
(Signed) THOS. BROWN.

TO THE EDITOR,
Planters Chronicle.

Dear Sir,—We are all very much obliged to the Scientific Officer for his clear and thorough exposition of the respective merits, and demerits of spraying and brushing, and to the editorial remark that led to it.

I shall look with interest for the reprinting of Mr. Brown's articles on the subject of Green Bug treatment—for though we have all read them, I suppose, a compact reproduction at this juncture, would be very acceptable.

Yours faithfully,
(Signed) C. DANVERS.

Kelagur, July 1, 1913.

Treating Stumps with Chemicals.

THE EDITOR,
Planters' Chronicle.

Dear Sir,—I was much interested by a cutting on the above subject, which was reproduced in your issue of the 24th May last, and shall be greatly obliged if any of your readers who have tried the method therein advocated, (equal parts of nitric and sulphuric acids) will give information on the following points:

1. The best time of year to operate.
2. Whether both green and dry stumps can be equally well-treated.
3. What effect, if any, it has on the surrounding cultivation.
4. What is the size of the "big stump" that requires ½ a pint of the mixture.

And will the Scientific Officer kindly say if he thinks the "well-fitting plug" is for the purpose of keeping out rain, or keeping in fumes? For in the former case, it need not be so very well-fitting if used in the dry weather.

Yours faithfully,
(Signed) C. DANVERS.

Kelakur, July 1, 1913.

No. 513/1913.

Office of the Planting Expert,
Bangalore,
3rd July, 1913.

THE EDITOR,
Planters' Chronicle.

Sir,—I have not tried this experiment of destroying stumps with a mixture of Nitric and Sulphuric Acid, myself, but it has been tried recently by the Scientfic Assistant for Coorg, and the treated stumps are now under observation. The plug is I presume to keep in the fumes and the acid, for I was told that in the Coorg experiment, there was a considerable evolution of gaseous fumes and the acid foamed up a good deal. I would warn any one conducting experiments, with this method that these acids are dangerous to handle and should not be put in the hands of coolies.

Since your correspondent is interested in the matter, I will arrange for the Scientific Assistant for Mysore to carry out some experiments with the method.

Yours faithfully,

(Signed) RUDOLPH. D. ANSTEAD,
Planting Expert.

Spraying Green Bug in Coffee.

At a moment when the appearance of this pest in the coffee districts of Mysore and Coorg is causing some anxiety in the minds of the Planters of both districts it has been thought advisable to reproduce such letters on the subject that have appeared up to date. Mr. Brown, who has given the subject much attention, has very kindly given us permission to republish those that he has written, giving his methods of spraying and his prescription of ingredients, with good results on his Estate. Many inquiries have come to the office asking for information and we trust that those inquiries will be best met by the reproduction of Mr. Brown's letters.

1. LETTER APPEARING IN THE "MADRAS MAIL," 22ND JUNE, 1910.]

"Having treated some coffee with rosin, soda and soap, as recommended and largely practised by Mr. Nicholson, both with brushing and spraying, I am anxious, considering the immense importance of the subject, to communicate the results so far, in the hope that it will be found interesting and helpful to my brother-planters. I would have preferred carrying on my trials for a year ere going into print, but much valuable time may be lost thereby and loss continued to unfortunate proprietors of coffee estates. I have found Mr. Nicholson's wash excellent, applied either with brush or sprayer. The latter has, to my mind, failed so far, in our hands, owing to two causes, *viz.*, dilution of the wash for the sprayer, and wanting to see results as rapidly as is seen with the brushing. Brush work I have found very expensive, as a cooly (with all defference to the opinions and statements of others) can only do from seven to ten large trees, and these only apparently thoroughly. On a 5 acre block I got the work done at Rs.8 per acre, but here the trees were very sparsely covered with foliage, owing to repeated and neglected attacks of the bug. On larger trees in another place the cost has been undoubtedly Rs.30 per acre for labour. The average cost here, however, let me explain, was Rs.10 an acre, because only a third of the estate was done. The cost of the material, *i.e.*, of soap, rosin, soda, each 1lb. to 4 gallons of water, and 80 gallons per acre, works out to about Rs.5

only. I used No. 16 paint brushes, which can be obtained at 6 annas from Messrs. Hoe and Co., Madras, and found these far superior and more economical in every way from the coir brushes of cooly make. The injury to the trees is *nil*, too, as compared with the coir.

"Three hours after the brushing, not a single bug remains green to the naked eye, and in a few days there is a burst of new leaf that is quite encouraging. I find, however, that three days after, a few small bugs are visible here and there, and these soon spread, of course, as the planter knows only too well. Still, there is enough done to my mind to urge men to adopt this treatment at once and most vigorously, for given, as with me, Rs.2,000 worth of crop on 30 acres, it is certain that an expenditure of Rs.1,000 on treatment of the bug will insure all of the crop being picked, while without it not a half will be obtained. Thus, with the treatment one spends practically *nil*, and has healthy trees at the end of the crop for the next year. I need hardly say that the procuring of labour for a large acreage at the supreme moment is almost impossible, and this, possibly, has given pause to planters. With the sprayer, I found that if the 4 gallons be diluted to 10, as most would do, and as advised in Mr. Lefroy's work, the result is, so far as a careful inspection after a week can indicate, failure, but with the same strength with the sprayer as with the brush, although the day after and for many days, there is a most disappointing appearance, and the green with the venomous V staring you in the face, from day to day more and more are browning off, and it seems at the time of writing that the sprayer will, as anticipated by our Scientific Officer, triumph. If my anticipations turn out correct, I should be sorry not to have given the earliest intimation of possibilities, so I trust I shall to pardoned for rushing into publicity so soon after the experiments.

"When Mr. Lefroy visited these Hills and gave a practical demonstration with this sprayer, I was present and was one of the first who invested in a sprayer, through our energetic Secretary, Mr. Brock, of Kotagiri, who, I fear, found that the application was ineffectual. Anyhow, Mr. Brock moved on a couple of years after to pastures new and the Nilgiri Planters' Association lost one of its most energetic and most appreciated members. I feel now that the mistake was that the mixture was not nearly strong enough to kill the insects. A neighbour, however, adheres to somewhat the same method as shown us then, and declares he has had steady success with it for the past five years, and it was to his kindly urging that I owe the fact of my again turning to the spraying, which has resulted in this letter."

"It may be as well to give clearly, and in simple language, the mode of preparation of the mixture:—Take 1 lb. of each of the following:—Rosin, soap and washing soda. Powder and mix the rosin and soda, placing the mixture in a kerosine tin with a little water. Place on a gentle fire and boil, adding cold water from time to time as the stuff boils up. Continue for about an hour, then add the soap shaved into slices, stirring up until all is melted. Remove from the fire and leave to thoroughly cool. When cold add more cold water to fill up the tin (4 gallons). To apply with brushes, proceed exactly as a man does with his chin for shaving. The greater the lather, the better the result. I have called this "Nicholson's shaving brush application." For the sprayer, use the 4-gallon mixture without addition of more water. A double nozzle does good enough work, and is quicker. A cooly can easily spray 300 trees in a day, or, say, an acre in three days. I would advise a "Knapsack Sprayer" per 10 acres, which means that for a 200 acre garden, 20 sprayers and 20 coolies only, employed for a period of a month at a time, for each of, say, three sprayings are needed.

The cost would work out as follows:—

Material for an acre	... Rs.	5	0	0
Boiling for three sprayings As. 9 a spraying	... „	1	11	0
Labour at Re.1 per spraying ...	... „	5	0	0
Renewals for sprayers approximately	... „	0	5	0
Total	... Rs.	10	0	0

This is the cost given by Mr. Nicholson for the brushing system; but whereas his is an average cost, this is the particular cost for the affected acreage only. I shall at all times be pleased to allow anybody to visit the places on which the spraying is being done, so that personal inspection might be added to the information here given. For those around Coonoor, Carolina is quite handy, while the Katharine Falls Estate, Hallacarry Village, can be seen by any planters out in that direction.

"It will be necessary, I should add, that the treated trees should be cultivated if the bug is to be kept off. I have noticed that where owing to cultivation the trees have the power of re-making foliage, the fungus we so much desire to have propagated comes on spontaneously, which is quite a new point deserving attention, for if my observations have been correct, it affords one explanation of how healthy trees throw off this as well as all other pests. Many are not aware that the steel blue lady bird has appeared on the Adderly Estate in large numbers spontaneously."

[2. LETTER APPEARING IN THE "MADRAS MAIL," 25TH JUNE, 1910.]

"In my article on "Brushing and Spraying Methods" please read "gallons of water, and 80 gallons per acre," for "gallons at water, and 12 gallons per acre."

It will be noticed that the cost of a kerosine tin full of the wash (4 gallons) works out to approximately annas 4 viz., rosin 1 anna, soda 1 anna, and soap annas 2, and for Rs.5 twenty tinsful, or 80 gallons, of wash is obtained. I find that with an ordinary sprayer nozzle, it is difficult to get coolies to run the quantity (80 gallons) over an acre, and I have therefore sent for a "Mistry" nozzle, which is stated to give a finer spray. Failing this, it is advisable to follow the practice of my neighbour and dilute to 8 gallons, but this practice I have no certain knowledge of personally, and if followed results must be carefully watched, not forgetting that time is needed for full action. Personally I think the stronger solution most advisable, even though the cost be doubled for material, per spraying.

"In the cost I lost sight of the three sprayings, which would treble the cost of material, of course, and would make the following correct:—

	Rs.	A.	P.
Material for an acre at Rs.5 per spraying ...	15	0	0
Boiling for 3 sprayings annas 9 per spraying ...	1	11	0
Labour at Re.1 per spraying	3	0	0
Renewals for sprayer, approximately	0	5	0
Total ...	20	0	0

"Given one half of the estate affected, the average cost will be Rs.10 per acre for three sprayings per annum."

[3. LETTER APPEARING IN THE "MADRAS MAIL," 2ND JULY, 1910.]

"I have read with interest Mr. Nicholson's letter in your issue of the 27th June on this matter which is of such supreme importance, just now to a large body of people. I am very glad we have some information, first hand, from the gentleman to whose untiring perseverance we owe the hope

of growing coffee in face of this pest. The brush sent to me is very good indeed, and better far than those my coolies did the work with, which however were large enough and gave a splendid lather. I insisted on the latter being produced, and I have a splendid looking field of coffee as the result of the brush work. In face of the possibilities at no prohibitive cost, it is sad to see coffee being rooted up; (I am using stumps for my dryer purchased from a coffee estate) while on large estates of some 300 acres, the crop is only from 3 to 15 tons for the coming season.

"I must, however, take exception to the statement made by Mr. Nicholson that it will take "2 gallons to spray a fair sized tree." I find that the figures I published will need considerable qualification by the side of facts, as revealed by days of spraying, Here are the results as carefully noted and reported:—3,169 trees sprayed by one "Eclair" sprayer at a cost of Rs.7-1-11 for all labour inclusive from the 6th to the 29th June (24 days). No work was done on Sundays, so the actual number of days is less. Material used 127½ lbs of each of soda, rosin and soap. Cost is as reported at anna 1, anna 1 and annas 2 per lb., Rs.31-14-0, or say about Rs.12 per acre per spraying against my corrected figure of Rs.20 for three sprayings. Here we have (*vide* my published figures) 127½ x 4, or 510 gallons, for, say, 3 acres, or 170 gallons per thousand trees, or 1·36 pint per tree. This, however, is double what it should be with a good nozzle I think, and is for very bad cases, neglected for long. The trees, however, from shade and manuring and partial brushing work are large. Now I feel pretty sure that with the brushing, as we did it, the cost would have been for material Rs.5 only; but labour Rs.30, The fact that planters have gone in for brushing in either a desultory manner (as I did myself) or not at all speaks for itself. It may be that there is still much to learn of the correct manner of applying, so as to bring down the cost. This planters must watch, and it is sincerely to be hoped that results will be published, not in any carping mood, but with an earnest desire to help.

"I hope to state that to-day, weeks after spraying and brushing, the latter is showing cleaner trees and planters must be careful about deciding what they will pin ther faith to."

[4. ARTICLE APPEARING IN THE "P. C." ON MAY 27TH, 1911, IN PLANTERS' PAPER No. IV.]

Notwithstanding the heavy and prolonged rains Coonoor enjoyed during the last N. E. Monsson, leading to the hopes expressed by our Sc. O. that this pest will be less in evidence in the current year, virulent attacks of young bug may be seen on almost any estate that is afflicted with the pest, and unless vigorous measures are adopted, and where adopted now persevered in, hopes are likely to be sadly disappointed, we feel sure.

We last wrote of "Spraying" *versus* "Brushing" in June 1910. At that time "Bug" had already played sad havoc with young berries and caused a loss of a large percentage and weakened a larger, yet the adoption of regular spraying has resulted in much gain to us in total of crop picked, and what is of far more importance, the vigour of trees for the next crop. The gain has been marred by the severe and prolonged cold and by the unprecedentedly severe drought through which Coonoor is still passing.

We have found it quite possible to keep 17 acres of Coffee clear of "Bug" with following:—

1 Good Sprayer (we now use the "Four Oaks") 1 man and a boy on Rs.12 a month. spraying for roughly 150 days in the year, and using daily

1 lb. of Washing Soda, costing delivered 10½ pies

1 lb. of Rosin of a common kind, delivered 21 pies,

and have discarded the use of Soap altogether as being unnecessary. This saves a lot in supervision and watching, for however much coolies dislike soap when they pay for it, the case is otherwise when it can be obtained by breaking the Commandment!

The cost then works out as follows :—

Labour at Rs. 12 for 6 months (150 days)	... Rs.	72	0 0
Material at 3½ pies per day for (150 days)	... ,,	24	9 9
Cost on 17 acres at 5-11-0 about ...	Rs.	96	9 9

The first cost may be double or treble of this, if the whole area be badly affected, but once got under the above is, if anything, over the actual cost. We shall be glad to allow personal inspection and inquiry at Carolina, Coonoor, by anybody interested, who is prepared to approach the subject with an unprejudiced mind, and who is earnestly inclined to learn, and to benefit the Planting Community.

We would like now in this connection to quote from page 83 of Mr. Lefroy's "Indian Insect Pests" and to accentuate the fact that the Book was published in 1906, and the information made available to us long before that by personal visits and demonstrations of Mr. Lefroy.

"Rosin has for many years formed the principal ingredient of many excellent washes for sucking insects. When boiled in water with a suitable chemical, rosin dissolves, forming a clear brown wash which can be safely applied to plants at a strength ....." a rosin wash of this kind on drying forms a varnish, which asphyxiates some insects by closing the stigmata on the sides of the body through which they obtain air.

We would like to accentuate the fact that the results of spraying on the "Bug" are not to be noticed in a few hours as with brushing (where it is presumable some of the bug is even brushed off mechanically, to work up again) but for days and almost a week after. We have observed that the bug crawls into the varnish and is entangled even as the flies are by "tangle-foot" and that the drops of stuff gradually percolate down the tree in every direction, slowly in moist weather as is naturally to be expected. Not the least part of the advantage over brushing is that all bark is covered with a spray, which is hardly the case with brushing, particularly when one is not there to watch.

We have on 30 acres of Coffee 2 sprayers at work near the Hallacarry Village, the figures of which work out to the same lines as here given.

As regards crop. We picked on the whole 47 acres less than one ton last year, and 2¼ tons in the current year, with abundant promise of complete restoration of the Coffee to its old condition, which, however, here, we would state was never very good, for the produce at no time topped 3½ tons, in all, in the past 8 years, during all of which time the "Bug" has steadily made headway, not entirely uninterrupted, for measures of doubtful utility and great cost were followed, of which more anon, should it prove interesting to your readers.

Vigorous manuring operations and the old style of pruning have, with the confidence gained in the results of the spraying, been adopted, and success or failure shall be honestly reported for this paper.

London, 23rd May, 1913.

The Secretary,

The United Planters' Association,

South Parade, Bangalore,

S. India.

Dear Sir,—Kindly find herewith particulars of trophies that have been offered by the Rubber Growers' Association, London, in connection with the next Rubber Exhibition, of which I am sending prospectus by separate post. Many of these trophies are important to all rubber producing countries as well as to Manufacturing Countries.

Mr. Henry C. Pearson of America is offering a thousand dollar silver cup for the best means of extracting the latex from the wild trees of the Hevea, Manihot and Castilloa species; by the best means he implies one that is relatively of the greatest value. This is important to Brazil, Mexico and Plantations of the East, and other rubber countries of the world. In all trophies to the value of £1,500 are being presented for competition for the better production of the crude rubber, and also several trophies for the manufacturing section.

Yours truly,

(Signed) A. STANES MANDERS.

[*Inclosure.*]

The Committee of the Rubber Growers' Association have decided to offer the following trophies for the Rubber Exhibition, to be held in London, June 1914.

1. That the Rubber Growers' Association Medals be offered for the best commercial samples of Plantation Rubber exhibited in the following classes:—

CLASS 1.—Crepe.

CLASS 2.—Smoked Sheet.

CLASS 3.—Assorted invoice, embracing No. 1 Rubber and Scrap Grades.

Note.—Samples entered for competition to be wharf-drawn samples, in each case representative of a break or invoice of not less than 50 cases of Rubber, and such samples must be certified by the Wharfingers as having been drawn within three months of the opening of the Exhibition. The awards to be given on the judgment of the Standard Qualities Committee of the Rubber Trade Association of London.

2. That a Gold Medal be given by the R. G. A. for the best exhibit connected with Plantation Rubber grown in the Middle East, to be awarded by Judges to be appointed by the R. G. A.

3. A prize of £50 and a Gold Medal to be given by the R. G. A. for what is adjudged to be the most valuable improvement connected with the Collection or Preparation of Plantation Rubber, (open only to Managers or Assistants on Estates), such improvement to have been introduced between the 1st July, 1913, and the 31st March, 1914, at which latter date all claims must have been lodged with the R. G. A. in London. These awards to be given by Judges to be appointed by the R. G. A.

4. That the R. G. A. Gold, Silver and Bronze Medals to be given for the three best exhibits of Rubber-flooring in Tile or Sheet form. Open to Manufacturers of any country.

5. That the R. G. A. Gold Medal be given for the exhibit composed of the greatest variety of articles made from the Rubber for commercial and domestic purposes. Open to manufacturers of any country.

6. That a prize of £50 and a Gold Medal be given for the discovery and application of such new use for Plantation Rubber as may be adjudged the most valuable; special consideration being given to the weight of the Rubber which such application is likely to consume.

6, Mincing Lane,
London, E.C. 11th June, 1913.

To the Secretary.

Dear Sir,—The increasing output of rubber from the East, points to the advisability of those interested in Rubber Plantations organising with the object of fostering new uses for the product.

My Committee would point out that an organization exists, both in India and Ceylon, for pushing the sale of Tea from these countries, but so far no steps have been taken by the Plantation Rubber Industry to find new outlets for the product.

The Committee of this Association, in order to give some incentive to place rubber to new uses, proposes to offer one hundred guineas at the Rubber Exhibition to be held in London next year, for the best new use for rubber.

It has been in the mind of the Committee that if each individual Company took a small interest in the object of pushing Plantation Rubber, it would probably result in a larger consumption, and it is suggested that an Association be formed with a view to achieving this end.

There are some 530 Rubber Companies mentioned in the new Book about to be published by this Association, and if each Company would subscribe a small amount, say 10/- for every £1,000 capital, to such a scheme, a fair sum would be available, and, with a practical Committee would be in a position to consider any scheme, such as laying experimental Rubber Roads, etc., and if thought desirable to foster such enterprises.

As there would be no promotion expenses in forming such an Association, all moneys subscribed would be available for expenditure for practical benefit to the Industry.

My Committee will willingly subscribe £50 to such an Association, and will be pleased to hear the views of your Directors on the proposition.

Should sufficient number of approving replies be received, my Committee are prepared to take further steps to formulate a practical scheme.

By Order of the Board,

(Signed) A. KENDALL,
Secretary.

THE EDITOR,
The Planters' Chronicle.

The above is a letter I have addressed to all Rubber Companies and trust you can publish same.

COFFEE AND TEA.

Statistics are as a rule very dry reading, but the following information, which has been extracted from the *Annual Diplomatic and Consular Reports*, may be of some interest to Coffee and Tea planters.

In the Dominican Republic, a great increase of coffee production is reported for 1912, after three very poor years, but it is still far smaller than in 1908. As in the case of Cacao, the quality is good, but too little care is taken in preparation and selection. The bulk of the coffee is grown at Moca, near Santiago, but the best quality comes from Barahona and Bani in the South West. Barahoni coffee, sold at 9½*d.* in the New York market. 2,295,147 Kilos. (2,254 tons) were exported during the year 1912, chiefly to the United States, France, and Germany.

The following are the figures for coffee production in Java during 1912, and the estimates for 1913: in tons.

	1912.	1913.
Government—		
Java (Arabica)	4,011	2,525
Liberica	308	266
Robusta	567	446
Private—		
Java (Arabica)	10,826	4,420
Liberica	3,273	3,076
Robusta	15,295	17,910

33,240 tons were exported during the year 1912.

With regard to Tea, 61,831,660 lbs. were exported from Java during 1912. The following account of the industry is given by the British Consul:—

"Although the prices obtained for Java Tea have been good, the year on the whole has not been so remunerative to planters as 1911. Production has steadily increased, exports for the year being fully 22 per cent. in excess of that of its predecessor. This, in a great measure, is due to extensions of older estates and new areas coming into bearing, as the weather conditions during the period under review, have not been very favourable. Large quantities of wet leaf from native gardens were purchased by the factories, which tended, in many instances, to lower the standard produced. Exports to Russia show a marked decline, while those to the Netherlands and the United Kingdom, have each exceeded that of the previous year by fully 5,000,000 lbs. The average prices obtained in the London and Amsterdam markets, ranged from 5½*d.* to 8½*d.* and 4¾*d.* to 8*d.* per lb. respectively. Prices ruling in the Batavia market, were above the parity of the foregoing. The following figures give the exports to the different countries for the past two years.

	1911. lbs.	1912. lbs.
Netherlands ...	22,649,400	28,333,536
United Kingdom ...	15,501,500	21,285,516
Australia ...	5,578,600	6,511,976
Singapore, for transhipment to North China and Russia ...	3,237,600	1,936,058
Russia ...	2,005,300	1,470,298
Canada and America ...	403,800	380,162
Other countries ...	1,142,300	1,914,114

Approximately 2,000 acres were under Tea cultivation on the East Coast of Sumatra at the end of 1912, but no tea was exported during the year.

RUBBER.

Hevea Rubber Seed Oil as a Poonac.

At the Annual Meeting of the U. P. A. S. I. in 1910, the Planting Expert called attention to the possibility of extracting the oil from the waste Hevea Seed (*P. C.*, V. p. 364), and during the following year, published notes on some preliminary work done with it, by Messrs. Peirce, Leslie and Co., at Cochin, giving the analyses of the residual poonac obtained (*P. C.*, VI. p. 122, Sc. O. Paper 58). Since then, several articles on the subject have been published in these pages, including a letter from Prof. Dunstan of the Imperial Institute to the Planters' Association of Ceylon, pointing out the benefits likely to be derived from the industry (*P. C.*, VI. p. 170); an article on the subject published in the "Bulletin of the Imperial Institute." (*P. C.*, VI., p. 402); and analyses of the poonac, from Messrs. W. Graham and Co. (*P. C.*, VI. pp. 580 and 784).

Since then, Mr. Wicherley has established a plant, for crushing the seed in Colombo, and in the *Tropical Agriculturist* for June, the following article appears above his name, describing the results he has obtained, and discussing the future possibilities of the oil.

'It is over two years since, I began seriously to consider the possibilities of utilising Para Rubber seed, both for its oil and its residue kernel, as cattle food. After many tentative experiments which all proved the highly valuable qualities of the seed under analysis, I put down a plant at Grand Pass, Colombo, with a view to treating this bye-product on a commercial basis. Planters were at first rather shy of our proposals, but eventually, we were able to obtain all the seed our stores would hold, at the price which left the planter a net profit of about £1 per ton, which was evidently highly satisfactory, since we never received a single complaint from any of our customers on this account.' The initial work of organising supplies, was both tedious and costly, and it was not until the end of October, 1912 that I was able to congratulate myself on the fact, that the seed in stock was more than sufficient for my work. I had the previous year and early in 1912, personally canvassed the Hull Oil trade, submitting samples of Ceylon seed only, I also obtained seed from Malaya, but for some reason or other, they deteriorated in an alarming manner, so I gave them up as experimental samples. The seed was submitted in both the undecorticated and the decorticated state, being crushed separately and carefully analysed to determine the respective value of its constituent parts.

"Among the firms to whom samples were submitted, were the well-known British Oil and Cake Mills of Hull and Great St. Helens.

"I received their report, signed by the General Manager on 1st January this year, and the following are among many of the interesting conclusions arrived at by them respecting my consignments;—

"'I have much pleasure to report to you, that we have made a very careful examination of the samples of rubber seed which you sent us. The seed that came over in the shell, would not be serviceable for cattle food, as the shell is dangerous to animals. The seed should therefore be decorticated. I have pleasure to attach herewith three analyses. You will note our Chemist reports, that he finds your seed contains approximately 4 kernel and 53 shell. I can now further advise you of our general experience in this connection. The cake is rich in feeding value. With regard to the soil, we think the place this can take amongst other oils, has now been fairly well established. It comes under the Drying Oil class and appears to be one of the best

natural substitutes for Linseed Oil that has yet been found. It seems equally serviceable for the soap maker. We do not suppose there can be any difficulty whatever in finding a ready market for the Oil in considerable quantity.

"'According to our crushing experience, the Decorticated kernels on the basis of to-day market value would be worth to us about £9·10·0 per ton delivered to the U. K. Port. On this calculation, the seed in the shell would be worth £3·15·0 per ton. As to quantity, a considerable business could be dealt with at once, and there would be no difficulty in disposing fairly rapidly of 1,000 tons.—J. W. Pearson, Managing Director.'

"I enclose the general analyses referred to in the report, and these are all borne out by analysis taken locally in Colombo quite recently

"The question of decortication bothhered me considerably. I obtained three of the best decorticating machines on the market, but the almost equal proportions of shell and kernel presents at present an insurmountable obstacle to a rapid and effective separation of the two parts. The kernels must be immediately dried after decortication, otherwise they deteriorate rapidly, and every insect known and unknown, seems to lay claim to it as a rare delicacy. They will not, however, attack the seed when dried. The only enemies at this stage are the rats and squirrels, who are inordinately fond of them.

"Hereunder are the analyses above referred to:—

COPY OF ANALYSIS OF DECORTICATED (SUN DRIED) RUBBER SEEDS.

Oil	50·36	per cent.
Moisture	7·20	,,
Albuminoids	17·06	,,
Carbonydrates	18·72	,,
Ash	2·66	,,
	100·00	
Sands	0·18	

COPY OF ANALYSIS OF UNDECORTICATED RUBBER SEED HUSK (OR SHELL).

Oil	0·96	per cent.
Moisture	12·14	,,
Albuminoids	1·75	,,
Carbonydrates	11·15	,,
Wood Fibre	73·60	,,
Ash	0·40	,,
	100.00	
Sands	0·18	

"I think, the foregoing proves conclusively that planters possess a valuable bye-product in the waste rubber seed that is annually allowed to rot on the ground. Most of the seed we purchased, was collected by boys. I understand that a fair profit was obtainable by the whole of the planters who supplied us with seed. At any rate, we had no complaints on that score. Several thousands of tons were offered in from Malay States, but the price was prohibitive, and I am afraid, that just at present there is not much chance of securing supplies outside the F. M. S. and Ceylon, although the question is undoubtedly worth the serious attention of Pará Rubber Planters wherever the *Hevea Brasiliensis* may be found.